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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,467	04/05/2002	Uwe Manz	33806W005	5846

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SMITH, GAMBRELL & RUSSELL, LLP
1850 M STREET, N.W., SUITE 800
WASHINGTON, DC 20036

12
EXAMINER

WONG, EDNA

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/009,467

Applicant(s)

MANZ ET AL.

Examiner

Edna Wong

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

This is in response to the Amendment dated August 4, 2003. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Arguments

Claim Rejections - 35 USC § 112

Claims **1-6** have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection of claims 1-6 under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 101

Claim **5** has been rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The rejection of claim 5 under 35 U.S.C. 101 has been withdrawn in view of Applicants' amendment

Claim Rejections - 35 USC § 102

I. Claims **1 and 4** have been rejected under 35 U.S.C. 102(b) as being anticipated by **CH 629,258**.

The rejection of claims 1 and 4 under 35 U.S.C. 102(b) as being anticipated by CH 629,258 has been withdrawn in view of Applicants' amendment

II. Claim 5 has been rejected under 35 U.S.C. 102(b) as being anticipated by CH 629,258.

The rejection of claim 5 has been withdrawn in view of Applicants' amendment.

III. Claim 6 has been rejected under 35 U.S.C. 102(b) as being anticipated by CH 629,258.

The rejection of claim 6 under 35 U.S.C. 102(b) as being anticipated by CH 629,258 has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 103

Claims 2 and 3 have been rejected under 35 U.S.C. 103(a) as being unpatentable over CH 629,258 as applied to claims 1 and 4 above.

The rejection of claims 2 and 3 under 35 U.S.C. 103(a) as being unpatentable over CH 629,258 as applied to claims 1 and 4 above has been withdrawn in view of Applicants' amendment.

Response to Arguments

Claim Rejections - 35 USC § 112

I. Claims **5-6 and 10-11** are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for electrodepositing glossy gold and gold alloy layers, does not reasonably provide enablement for electroless depositing glossy gold and gold alloy layers. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Claim 5, line 2, recites "depositing". This term includes electroless depositing, vapor deposition, sputtering, painting, etc. However, Applicants' specification discloses that the glossy gold and gold alloy layers are electrodeposited (page 1, lines 4-6; and pages 7-11, Examples). Thus, the claims are not commensurate in scope with the specification.

II. Claim **10** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10

line 2, it appears that "the electrodeposition" is further limiting the depositing step (in claim 5, line 2) and not the purpose of the process in the preamble.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Bath

I. Claims **1-4 and 7-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over **CH 629,258** in combination with **Biberbach et al.** (US Patent No. 3,929,595).

The CH reference teaches an electrodeposition bath for depositing glossy gold alloy layers comprising:

(a) gold (= alkali or ammonium aurocyanide); and

(b) at least one gloss additive (= an aromatic and/or aliphatic sulphonic or sulphuric acid);

wherein the bath further comprises an additional gloss additive (= an aromatic and/or aliphatic sulphonic or sulphuric acid), which has at least one compound of the general formula:



in which

m is the number 3,

R is an optionally substituted aliphatic, aromatic or cyclic group,

X is H, SH, SO₃H, SR₁, SR₂-SO₃H (R₁ and R₂ are as R, and when

R is an aliphatic group, then X can also be (amino)heterocyclyl) [abstract].

The bath contains 0.01 to 10 g/l of the at least one compound of the general

formula I (= 5 mg-10 g per l) [abstract].

The bath further comprises one or more alloy elements in dissolved form (= Ni and/or Co as water-soluble compounds) [abstract].

The CH reference does not teach wherein the at least one gloss additive is selected from the group consisting of pyridine-3-sulfonic acid,or derivatives thereof; wherein R is a straight-chain or branched alkyl group with 5 to 12 carbon atoms; wherein the additional gloss additives contains at least one compound of formula I where R is a branched alkyl group with 6 to 10 carbon atoms; and wherein the compounds are pentyl sulfonate, ... or their isomers.

However, Biberbach teaches that the addition of the sulfonic acid derivatives of nitrogen containing heterocyclic (e.g., pyridine-3-sulfonic acid) increases the rate of deposition of the gold layer since the baths can be operated at higher current yields at higher current densities (col. 1, line 49 to col. 2, line 17).

Thus, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the electrodeposition bath of the CH reference with wherein the at least one gloss additive is selected from the group consisting of pyridine-3-sulfonic acid,or derivatives thereof because the addition of the sulfonic

acid derivatives of nitrogen containing heterocyclic (e.g., pyridine-3-sulfonic acid) to the bath would have increased the rate of deposition of the gold layer since the baths can be operated at higher current yields at higher current densities as taught by Biberbach (col. 1, line 49 to col. 2, line 17).

Furthermore, the reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by the Applicants. *In re Linter* 458 F 2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon* 919 F 2d 688, 16 USPQ 2d 1897 (Fed. Cir. 1990), cert. denied, 500 USPQ 904 (1991); *In re Linter* 458 F 2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon* 919 F 2d 688, 16 USPQ 2d 1897 (Fed. Cir. 1990), cert. denied, 500 USPQ 904 (1991) and MPEP § 2144.

As to wherein R is a straight-chain or branched alkyl group with 5 to 12 carbon atoms; wherein the additional gloss additives contains at least one compound of formula I where R is a branched alkyl group with 6 to 10 carbon atoms; and wherein the compounds are pentyl sulfonate, ... or their isomers because the CH reference teaches that the brightener is an aliphatic sulphonic or sulphuric acid (abstract). Although a straight-chain group of 3 carbons is disclosed (e.g., 1-propene-3-sulfonic acid), this is only exemplary and the teachings would have suggested that one skill in the art would have been able to determine the number of carbons in the aliphatic sulphonic or

Art Unit: 1753

sulphuric acid that would have successfully carried out the electrodeposition of the glossy gold alloy layers.

Furthermore, 5 carbons atoms is only 2 more than that disclosed in the CH reference (i.e., propene/propane). No significance is seen between them.

Process

II. Claims **5-6 and 10-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **CH 629,258**.

The CH reference teaches a process for the electrodeposition of glossy gold alloy layers, which comprises the steps of:

depositing glossy gold alloy layers using an electrodeposition bath containing:

- (a) gold (= alkali or ammonium aurocyanide);
- (b) at least one gloss additive (= an aromatic and/or aliphatic sulphonic or sulphuric acid); and
- (c) an additional gloss additive (= an aromatic and/or aliphatic sulphonic or sulphuric acid) of the general formula:



in which

m is the number 3,

R is an optionally substituted aliphatic, aromatic or cyclic group,

X is H, SH, SO₃H, SR₁, SR₂-SO₃H (R₁ and R₂ are as R, and when

R is an aliphatic group, then X can also be (amino)heterocyclyl) [abstract].

The bath contains 0.01 to 10 g/l of the at least one compound of the general formula I (= 5 mg-10 g per l) [abstract].

The electrodeposition occurs at a pH in the range of 3 to 6 (= 3-5) [abstract].

The electrodeposition occurs at a pH in the range of 4 to 5 (= 3-5) [abstract].

The bath further comprises one or more alloy elements in dissolved form (= Ni and/or Co as water-soluble compounds) [abstract].

The CH reference does not teach wherein the at least one gloss additive is selected from the group consisting of pyridine-3-sulfonic acid,or derivatives thereof.

However, Biberbach teaches that the addition of the sulfonic acid derivatives of nitrogen containing heterocyclic (e.g., pyridine-3-sulfonic acid) increases the rate of deposition of the gold layer since the baths can be operated at higher current yields at higher current densities (col. 1, line 49 to col. 2, line 17).

Thus, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the electrodeposition bath of the CH reference with wherein the at least one gloss additive is selected from the group consisting of pyridine-3-sulfonic acid,or derivatives thereof because the addition of the sulfonic

acid derivatives of nitrogen containing heterocyclic (e.g., pyridine-3-sulfonic acid) to the electrodeposition bath would have increased the rate of deposition of the gold layer since the baths can be operated at higher current yields at higher current densities as taught by Biberbach (col. 1, line 49 to col. 2, line 17).

Furthermore, the reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by the Applicants. *In re Linter* 458 F 2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon* 919 F 2d 688, 16 USPQ 2d 1897 (Fed. Cir. 1990), cert. denied, 500 USPQ 904 (1991); *In re Linter* 458 F 2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon* 919 F 2d 688, 16 USPQ 2d 1897 (Fed. Cir. 1990), cert. denied, 500 USPQ 904 (1991) and MPEP § 2144.

RE: Remarks

Applicants state that Marka does not disclose an electroplating bath containing at least one gloss additive is selected from the group consisting of pyridine-3-sulfonic acid,or derivatives thereof; in combination with a sulfonate or sulfate of the general formula I as an additional gloss additive. In response, it is well within the ordinary skill of the artisan to add more than one sulphonic or sulphuric acid to the electrolytic gold bath as taught by the CH reference (= an aromatic and/or aliphatic sulphonic or sulphuric acid) [abstract]. Pyridine-3-sulfonic acid is a conventional additive to electrolytic gold

baths as taught by Biberbach (col. 1, line 49 to col. 2, line 17) and the compound also fits the general formula $X-R-SO_3-H$ as taught by the CH reference (abstract). Thus, pyridine-3-sulfonic acid would have been an obvious additional gloss additive to the electrodeposition bath of the CH reference.

Applicants state that the electrodeposition bath of the claimed invention achieves improved current density/working range and improve rate deposition. In response, it has been held that a newly discovered use or function of components does not necessarily mean the system is unobvious since this use or function may be inherent in the prior art. *Ex parte Pfeiffer* 135 USPQ 31.

Furthermore, it is well within the ordinary skill of the artisan to expect a synergistic effect when using 2 gloss additives or brighteners in the electrodeposition bath

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

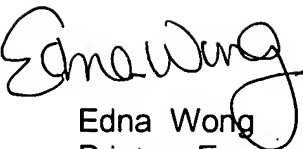
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (703) 308-3818. The examiner can normally be reached on Mon-Fri 7:30 am to 5:00 pm, alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1495.

Application/Control Number: 10/009,467
Art Unit: 1753

Page 13


Edna Wong
Primary Examiner
Art Unit 1753

EW
August 29, 2003